

Datasheet: EN 1.4301/304 – Austenite Square Bars - Stainless Steel Alumeco ApS 06-03-2025				Internal alloy name: 1.4301 Alloy type: Austenite Chemical Symbol: X5CrNi18-10 EN: EN 1.4301 AISI: 304 UNS: S30400 SS: 2333 JIS: SUS304 GB: S30408																									
Main usage: - Household appliances and consumer goods - Kitchen equipment - Indoor and outdoor cladding, handrails, and window frames - Food and beverage industry equipment - Storage tanks - Flanges and valves			Important norms and literature: General Standards: EN 10088-1: List of stainless Steel Product standards: EN 10088-3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes Geometric Tolerance: EN 10059: Hot rolled square steel bars for general purposes - Dimensions & tolerances on shape & dimensions. EN 10278: Dimensions & tolerances of bright steel products																										
Main properties: - Excellent weldability - Good stability against corrosion - Good formability, both cold and hot																													
Chemical composition in %: EN 10088-1 <table><tr><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Mo</th><th>Ni</th><th>Remarks</th><th>Rest</th></tr><tr><td>≤ 0,07</td><td>≤ 1,00</td><td>≤ 2,00</td><td>≤ 0,045</td><td>≤ 0,030*</td><td>17,5-19,5</td><td>-</td><td>8,0-10,5</td><td>N ≤ 0,10</td><td>Fe</td></tr></table> * For machinability, a controlled sulfur content of 0,015%-0,030% is recommended & permitted. For weldability a controlled sulfur content of 0,008%- 0,030% is recommended & permitted. For polishability, a controlled sulfur content of 0,015% is recommended.										C	Si	Mn	P	S	Cr	Mo	Ni	Remarks	Rest	≤ 0,07	≤ 1,00	≤ 2,00	≤ 0,045	≤ 0,030*	17,5-19,5	-	8,0-10,5	N ≤ 0,10	Fe
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≤ 0,07	≤ 1,00	≤ 2,00	≤ 0,045	≤ 0,030*	17,5-19,5	-	8,0-10,5	N ≤ 0,10	Fe																				
Mechanical properties: EN 10088-3 <table><tr><th>Dim. range (mm)</th><th>Temper</th><th>Rm MPa</th><th>Rp_{0,2} MPa</th><th>Rp_{1,0} MPa</th><th>Elongation (Longitudinal) A%</th><th>Impact energy (Longitudinal) KV₂</th><th>Hardness* HB</th></tr><tr><td>3-12</td><td>Hot rolled</td><td>520 - 720</td><td>Min. 210</td><td>Min. 250</td><td>45</td><td>100</td><td>Max. 215</td></tr></table> * Information values only;										Dim. range (mm)	Temper	Rm MPa	Rp _{0,2} MPa	Rp _{1,0} MPa	Elongation (Longitudinal) A%	Impact energy (Longitudinal) KV ₂	Hardness* HB	3-12	Hot rolled	520 - 720	Min. 210	Min. 250	45	100	Max. 215				
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7,9	0,73	15	16,0	500	200.000	No	17,5																						
Typical Alumeco products with this alloy Square Bars - Dim: 10-100 mm x Length: 3000 mm																													

Tolerances for square bars for EN 1.4301:

Tolerances classes		
Diameter d (mm)	Deviation for drawn flats	
	H11	H12
$10 < d \leq 18$	+0 -0,110	+0 -0,180
$18 < d \leq 30$	+0 -0,130	+0 -0,210
$30 < d \leq 40$	+0 -0,160	+0 -0,250
$40 < d \leq 50$	+0 -0,160	+0 -0,250
$50 < d \leq 65$	+0 -0,190	+0 -0,300
$65 < d \leq 80$	+0 -0,190	+0 -0,300
$80 < d \leq 100$	+0 -0,220	+0 -0,350

* Values are referred from Table 2 of EN 10278:1999

Deviation from straightness			
Product form	Steel group	Nominal dimension	Deviation max. (mm)
Squares	< 0,25% C	$d \leq 75$ mm	1,0
	$\geq 0,25\%$ C, alloy steels, quenched and tempered steels		2,0
	Stainless steels, ball and roller bearing steels, tool steels		1,0
	< 0,25% C	$d > 75$ mm	1,5
	$\geq 0,25\%$ C, alloy steels, quenched and tempered steels		2,5
	Stainless steels, ball and roller bearing steels, tool steels		1,5

* Values are referred from Table 4 of EN 10278:1999

Types of length and length tolerances		
Type of length	Length range (mm)	Limit deviation (mm)
Manufacturing length (M)	$3000 < L \leq 13000$	10% of bars supplied may be below the minimum for the ordered range but not less than 75% of the minimum of the range.
Fixed length (F)	$3000 < L \leq 13000$	± 100
Exact length (E)	< 6000	± 25
	$6000 \leq L \leq 13000$	± 50

* Values are referred from Table 5 of EN 10059:2003